Defense Information Infrastructure (DII)

Common Operating Environment (COE)

System Administrator's Guide Version 3.0 (Windows NT)

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Prepared for:

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Preface

The following conventions have been used in this document:

[HELVETICA FONT]	Used to indicate keys to be pressed. For example, press [RETURN].
`Courier Font`	Used to indicate entries to be typed at the keyboard, Windows NT commands, titles of windows and dialog boxes, file and directory names, and screen text. For example, choose the `Restart` option.
"Quotation Marks"	Used to indicate prompts and messages that appear on the screen.
Italics	Used for emphasis.

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1. Introduction

This document provides information and guidance needed for proper system administration of the Defense Information Infrastructure (DII) Common Operating Environment (COE) Version 3.0.0.4 for the Windows NT Version 3.51 Operating System. This document describes the setup and maintenance of the DII COE for the Windows NT environment and specifically addresses the core components of the DII COE application.

This document is divided into the following sections:

Section	Page
Introduction Provides a high-level overview of the DII COE software environment, summarizes installation configurations, and provides a list of additional sources of information.	3
DII COE Environment Lists hardware, operating system, and DII COE kernel components.	5
Operating Guidelines Explains startup and shutdown of the software and the hardware.	7
System Installation Overview Provides instructions for installing the Windows NT 3.5.1 Operating System, the kernel, the Developer's Toolkit, and segments.	9
System Administration Utilities Describes DII COE maintenance and management functions available to a system administrator.	11

1.1 The DII COE Kernel

The commercial software of the Windows NT Operating System forms the foundation of the DII COE kernel for Windows NT.

1.2 Additional Sources of Information

Reference the following documents for more information about the technical requirements for using the DII COE to build and integrate systems and for installation instructions for the DII COE kernel, which is the minimal set of software required on every workstation:

- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Integration and Runtime Specification* Version 2.0, DII COE I&RTS:Rev 2.0, Inter-National Research Institute, October 23, 1995

- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Kernel Installation Guide (Windows NT) FINAL* Version 3.0.0.4, DII.3004.Final.NT.IG-1, Inter-National Research Institute, November 1, 1996

- *Defense Information Infrastructure (DII) Common Operating Environment (COE) Programming Guide (Windows NT) FINAL* Version 3.0.0.3, DII.3003.Final.NT.PG-1, Inter-National Research Institute, October 29, 1996

- *Microsoft Windows NT Workstation System Guide,* Microsoft Corporation, 1994.

2. DII COE Environment

This section describes DII COE hardware components, operating system components for the Windows NT 3.51 Operating System, and DII COE kernel components.

2.1 Hardware Components

The software may reside on a single hard disk or across multiple hard disks.

- 80486 or higher with at least 16 megabytes (MB) of random access memory (RAM) (12MB minimum is required for Windows NT)
- 3.5-inch high density floppy drive (required to install the software)
- 125MB minimum free hard disk space to provide sufficient swap space and room for temporary files.
  - Windows NT Operating System—75MB
  - DII COE runtime files—10MB
  - Swap space and temporary files—40MB (recommended)
  - DII COE Tools—2MB (developers only).
- 500MB free hard disk space recommended for segments and data.

2.2 Operating System Components

- Windows NT 3.51 Operating System CD-ROM
- Windows NT 3.51 Service Pack 3 or later.

2.3 Kernel Components

The DII COE kernel is a suite of applications layered on top of the Windows NT 3.5.1 Operating System. The DII COE kernel media contains software relating to several areas:

- Operating System
- System Administration software
- Distributed Computing Environment.

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3. Operating Guidelines

This section provides operating guidelines for powering up and powering down the system.

3.1 Power Down

Follow the steps below to power down the computer.

STEP 1: Log out if you are currently logged in to the system. To do this, press [CTRL+ALT+DEL], which opens the `Windows NT Security` window. Click on the `Shutdown` button to open the `Shutdown Computer` window. Select the `Shutdown` option and click on the `OK` button. The computer will shut down.

STEP 2: Press [CTRL+ALT+DEL] to open the `Welcome` dialog box when log out is complete.

STEP 3: Select the `Shutdown` option from the `Welcome` dialog box. The `Shutdown Computer` dialog box appears.

STEP 4: Select the `Shutdown` option from the `Shutdown Computer` dialog box. The computer saves the data and shuts down. The `Shutdown Computer` dialog box appears with an option to restart the computer.

STEP 5: Power-off the computer at this point, or select the `Restart Computer` option to reboot the computer.

3.2 Power Up

Follow the steps below to power up the computer.

STEP 1: Turn on the peripherals, including the monitor.

STEP 2: Turn on the computer.

STEP 3: Press [CTRL+ALT+DEL] when the `Welcome` dialog box appears.

STEP 4: Type your name and password in the `Welcome` dialog box, and then press [RETURN] or click on the `OK` button.

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4. System Installation Overview

A workstation may be prepared for use by sequentially installing the following components:

- Windows NT Operating System
- DII COE Windows NT kernel
- DII COE Windows NT developer's toolkit (optional)
- Application segments (as desired).

4.1 Installing the Windows NT Operating System

Refer to the *DII COE Kernel Installation Guide (Windows NT) FINAL* for general information about installing the Windows NT Operating System. For more in-depth information, refer to a Microsoft Windows NT user's manual.

4.2 Installing the DII COE Windows NT Kernel

Refer to the *DII COE Kernel Installation Guide (Windows NT) FINAL* for information about installing the DII COE Windows NT kernel.

4.3 Installing the DII COE Windows NT Developer's Toolkit

Refer to the *DII COE Programming Guide (Windows NT) FINAL* for information about installing the DII COE Windows NT developer's toolkit.

4.4 Installing Segments

Refer to Section 5.3, *Segment Installation Option*, for information about using the COEInstaller tool to install segments.

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5. System Administration Utilities

Many system administration functions are built in to the Windows NT Operating System. This section describes how to access system administration functions from the Windows NT Program Manager desktop. It is beyond the scope of this document to describe all of the Windows NT system administration functions; instead, this section provides a brief description of relevant utilities. For more in-depth information, refer to a Microsoft Windows NT user's manual.

Windows NT system administration functions include the following options:

System Administration Options	Page
System (Printing) Options Describes how to select, connect, configure, and remove printers; manage print jobs; and remove documents.	11
Hardware Options Describes how to restart or shut down the system; copy, move, or delete files; format floppy diskettes; display hard disk availability; connect to network drives; and share file directories onto the network.	16
Segment Installation Option Describes how to install segments.	22
Network Options Describes how to change the computer name, set the system date and time, and edit the host information.	27
Account Management (User Manager) Options Describes how to create, edit, or delete new users; provide new names for users; change user passwords; and grant system rights.	28

These options and their associated suboptions are described in the following sections.

5.1 System (Printing) Options

Most printing functionality is invoked by double-clicking on an icon. The Windows NT Print Manager tool is invoked by double-clicking the `Print Manager` icon contained in the `Main` Program Group (open the `Main` Program Group by double-clicking on the `Main` icon). The currently installed printers appear as windows inside the `Print Manager` window. This window contains the `Printer` pull-down menu and the `Document` pull-down menu.

5.1.1 Printer Menu Options

The `Printer` pull-down menu options supported by the Windows NT Operating System are `Connect to Printer`, `Create Printer`, `Remove Printer`, and `Properties`.

5.1.1.1 Connect to Printer Option

The `Connect to Printer` option allows connection to any printer on the network that has been configured as a shared network printer. Selecting the `Connect to Printer` menu option opens the `Connect to Printer` window (Figure 1). Enter the appropriate information in the `Printer` field. Click on the `OK` button to save the information.

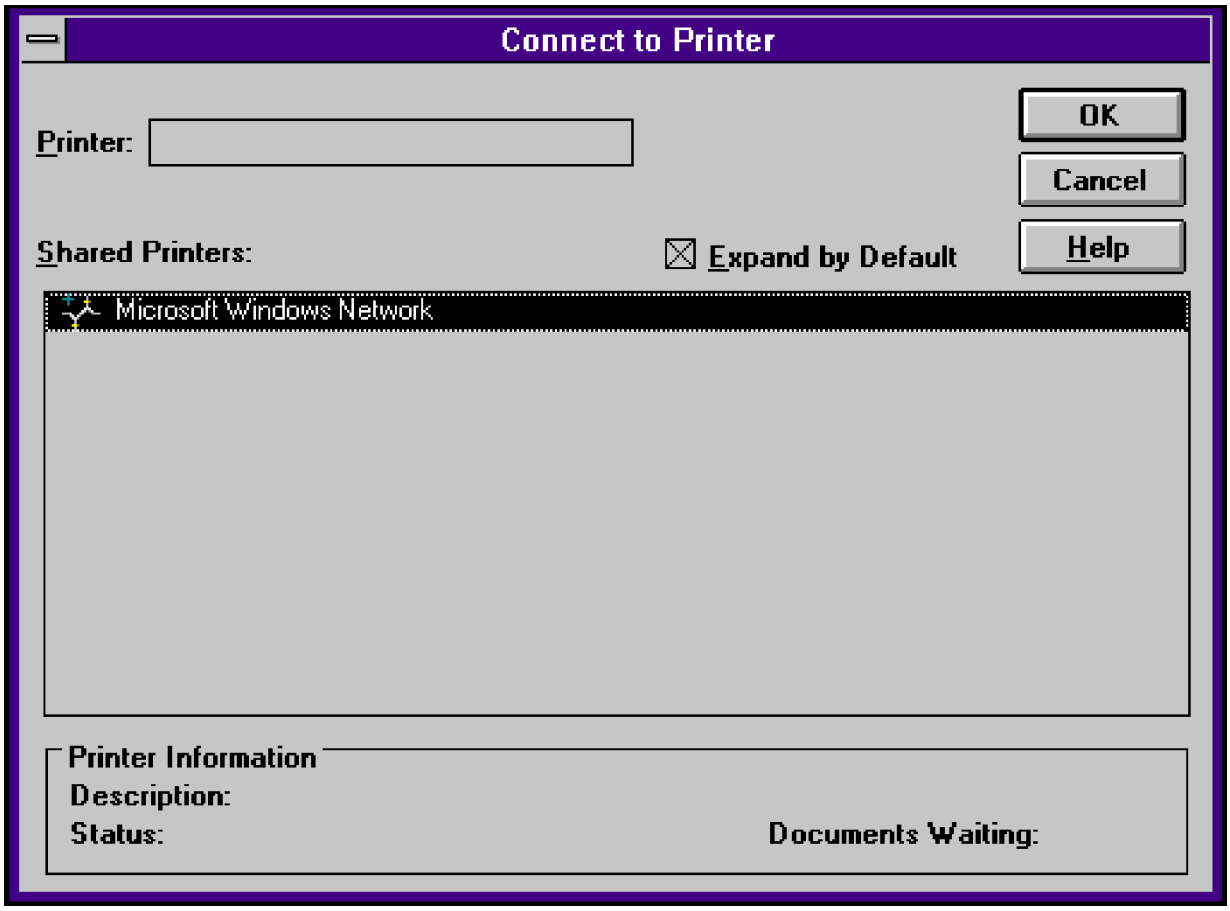

Figure 1. Connect to Printer Window

5.1.1.2 Create Printer Option

The `Create Printer` option allows a printer to be added and to be shared across the network. Selecting the `Create Printer` menu option opens the `Create Printer` window (Figure 2). Enter the appropriate information in the `Printer Name`, `Driver`, `Description`, and `Print to` fields. Click on the `Share this printer on the network` toggle to edit the `Share Name` and `Location` fields. Click on the `OK` button to save the information.

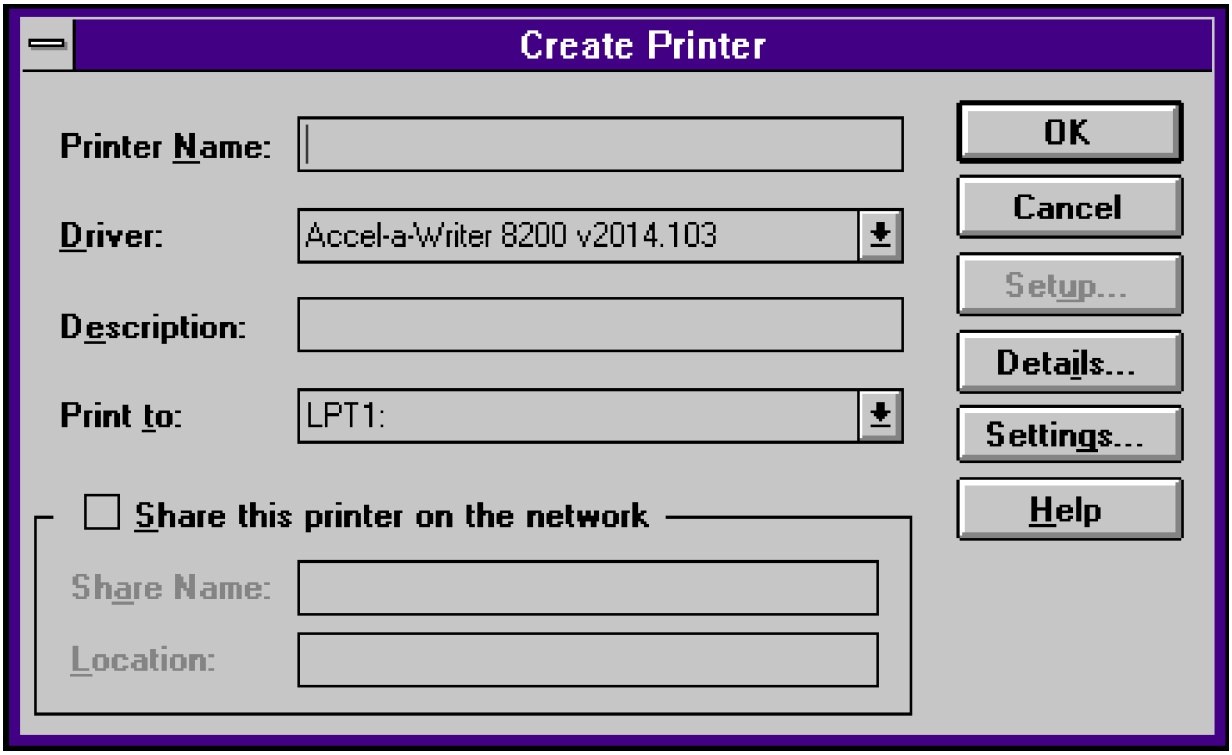

Figure 2. Create Printer Window

5.1.1.3 Remove Printer Option

The `Remove Printer` option allows a printer to be removed. In the `Print Manager` window, click on the printer icon of the printer you want to remove and then select `Remove Printer` from the `Printer` pull-down menu (Figure 3). Click on the `YES` button when prompted to confirm removal.

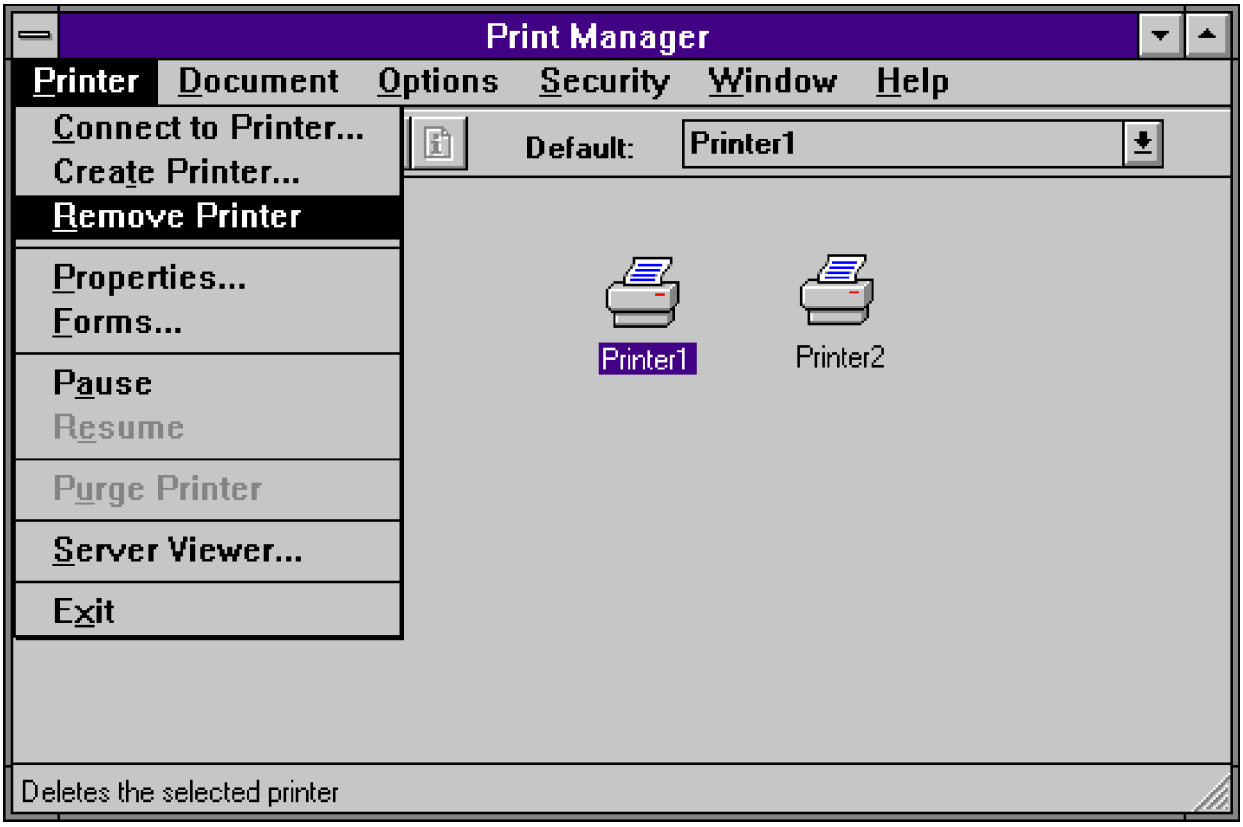

Figure 3. Remove Printer Option Window

5.1.1.4 Properties Option

The `Properties` option allows modification of the parameters entered when a printer was created. Selecting the `Properties` menu option opens the `Printer Properties` window (Figure 4). Enter the appropriate information in the `Printer Name`, `Driver`, `Description`, and `Print to` fields. Click on the `Share this printer on the network` toggle to edit the `Share Name` and `Location` fields. Click on the `OK` button to save the information.

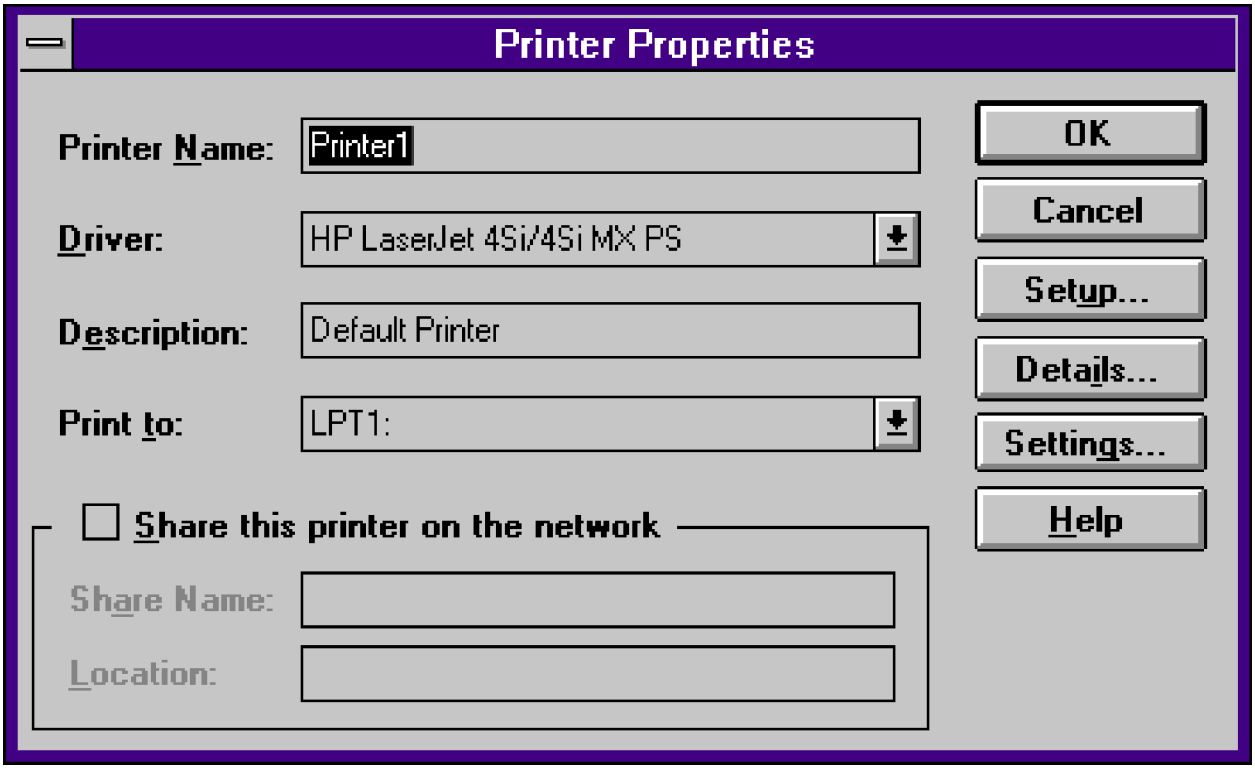

Figure 4. Printer Properties Window

5.1.2 Document Menu Option

The `Document` pull-down menu option supported by the Windows NT Operating System is `Remove Document`.

5.1.2.1 Remove Document Option

The `Remove Document` option allows a print job in the print queue to be removed. In the `Print Manager` window, double-click on the printer icon of the printer on which the document is queued. The window in Figure 5 appears. Highlight the print job in the `Print Manager` window that you want to remove. Select the `Remove Document Del` menu option. Click on the `YES` button when prompted to confirm the removal.

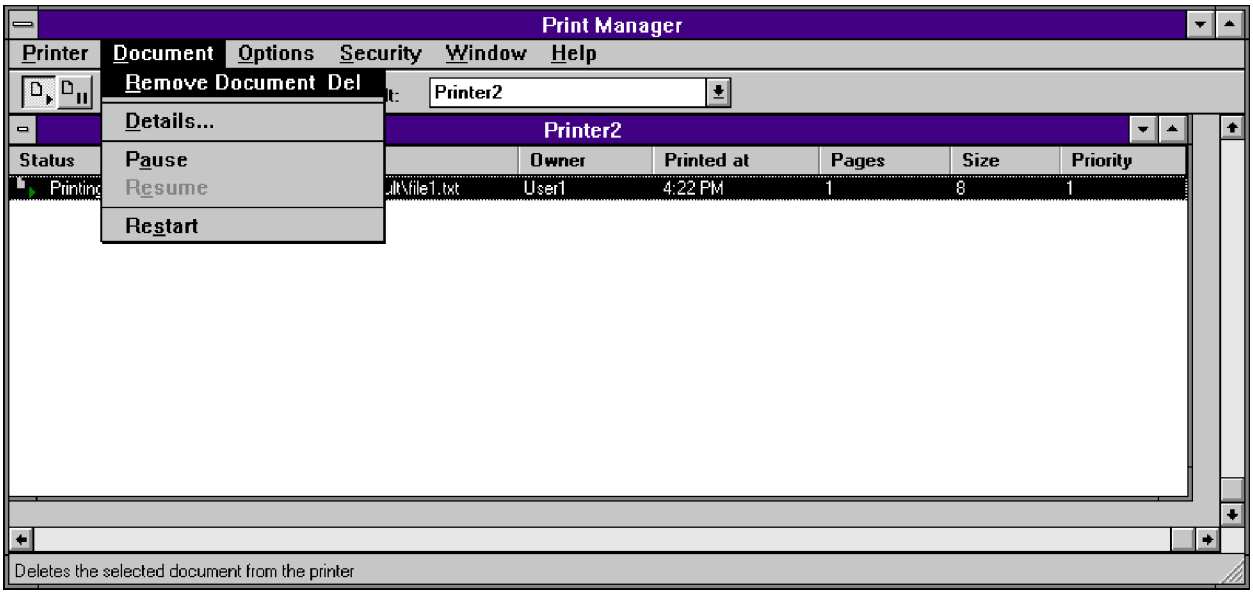

Figure 5. Remove Document Option Window

5.2 Hardware Options

Hardware options supported by the Windows NT Operating System are `Shutdown`, `Restart`, and `File Manager`.

5.2.1 Shutdown Option

The `Shutdown` option allows the user to shut down the computer safely. Select the `Shutdown` option from the `File` menu on the Program Manager menu bar. The `Shutdown Computer` dialog box appears (Figure 6). Click on the `Shutdown` toggle and click on the `OK` button to safely shut down the computer.

Figure 6. Shutdown/Restart Computer Dialog Box

5.2.2 Restart Option

The Restart option allows the user to safely shut down and restart the computer. Select the Shutdown option from the File menu on the Program Manager menu bar. The Shutdown Computer dialog box appears (Figure 6). Click on the Shutdown and Restart toggle and click on the OK button to safely shut down and restart the computer.

5.2.3 File Manager Option

The File Manager is invoked by double-clicking on the File Manager icon in the Main program group. The Window menu option of the File Manager allows multiple windows to be opened simultaneously. Each window represents a single directory and displays its files and subdirectories.

The File Manager utility provides the following system management functionality:

- Copies or moves files
- Deletes files
- Formats floppy diskettes
- Displays hard disk space availability
- Connects to network drives
- Shares file directories on the network.

5.2.3.1 Copying or Moving Files

Directories and files can be moved or copied using one of two methods: (1) using the menu or (2) dragging and dropping. To use the menu, click on the directory or file to be copied, and then select the Copy option or the Move option from the File pull-down menu. Enter the destination in the To field in the Move or Copy window and click on the OK button (Figures 7 and 8).

To use the drag and drop method on the same disk, position the mouse pointer over the directory or file you want to move, hold down the left mouse button, drag the image over the top of the directory in the destination window where the directory or file should be moved, and release the mouse button. To copy the directory or file instead of moving it, hold down the [CTRL] key while performing the operation.

NOTE: Directories and files will be copied by default when they are transferred between disks. To move the directories and files instead of copying them, hold down the [SHIFT] key while performing the operation.

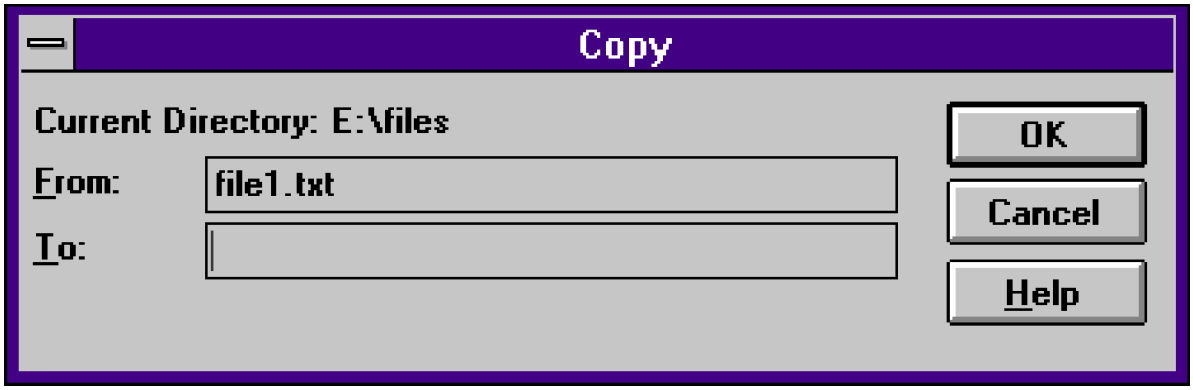

Figure 7. Copy Window

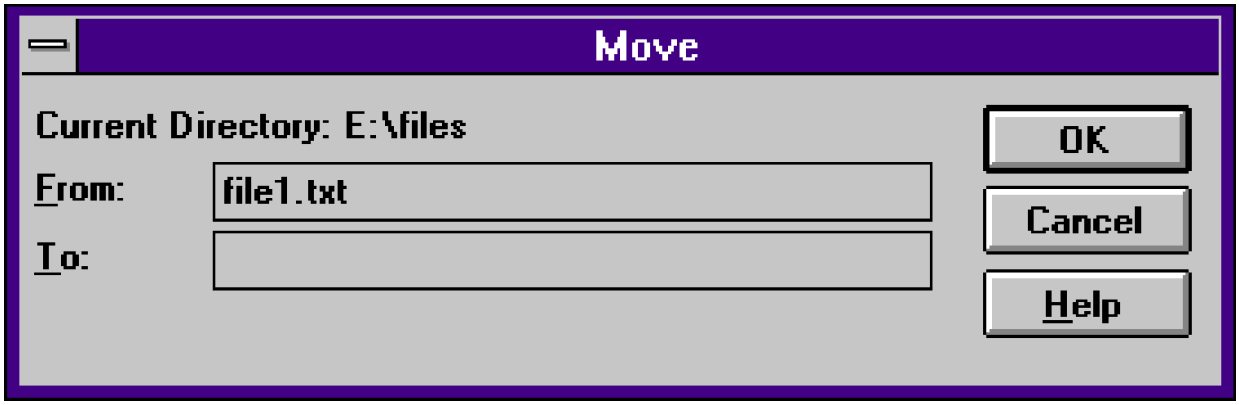

Figure 8. Move Window

5.2.3.2 Deleting Files

To delete a file or directory, select the file or directory by clicking on it once. Select the `Delete` option from the `File` pull-down menu. The `Delete` window appears (Figure 9). Click on the `OK` button in the `Delete` window to delete the file or directory.

NOTE: Selecting `Delete` for a directory deletes all files and all subdirectories within that directory.

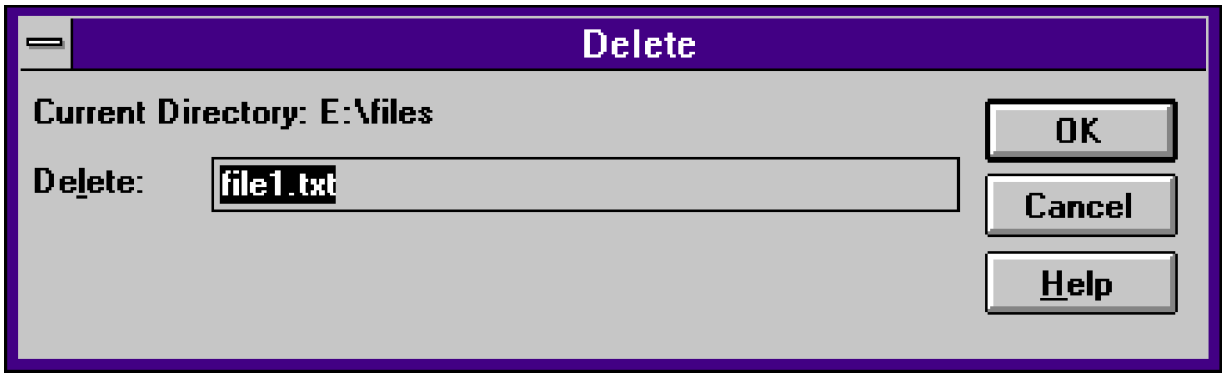

Figure 9. Delete Window

5.2.3.3 Formatting Floppy Diskettes

To format a floppy diskette, insert it into drive `A` or `B`. Select the correct disk drive to be formatted by clicking on the appropriate drive symbol from the symbols located below the `File Manager` toolbar. Select the `Format Disk` option from the `Disk` pull-down menu. The `Format Disk` window appears (Figure 10). Click on the `OK` button to format the floppy diskette.

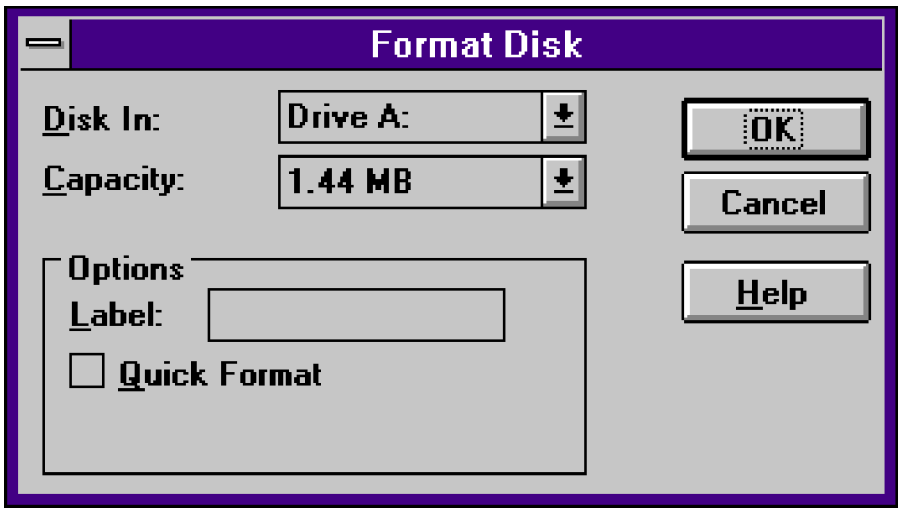

Figure 10. Format Disk Window

5.2.3.4 Displaying Hard Disk Availability

To check hard disk availability, select the hard disk by clicking on the appropriate drive symbol from the symbols located below the `File Manager` toolbar. The free disk space and total disk space appear in the lower-left corner of the `File Manager` window (Figure 11).

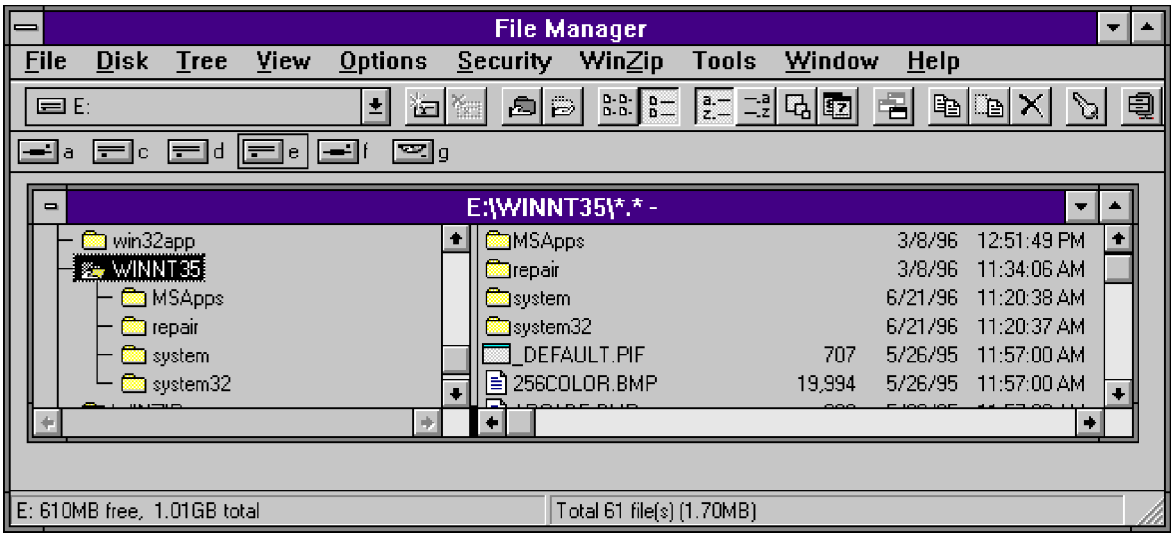

Figure 11. Hard Disk Availability Option Window

5.2.3.5 Connecting to a Network Drive

To connect to a network drive, select the `Connect Network Drive` option from the `Disk` pull-down menu to open the `Connect Network Drive` window (Figure 12). A list of all available file systems on network computers appears in the `Shared Directories` panel of the `Connect Network Drive` after a short delay. Double-click on the desired network computer to list the available file systems. Select the desired file system and then click on the `OK` button to connect to that drive. The local drive specifier can be changed from the default (next available) drive by clicking on the `Drive` field and selecting a new drive specifier.

The newly connected drive can then be accessed by its appropriate drive specifier.

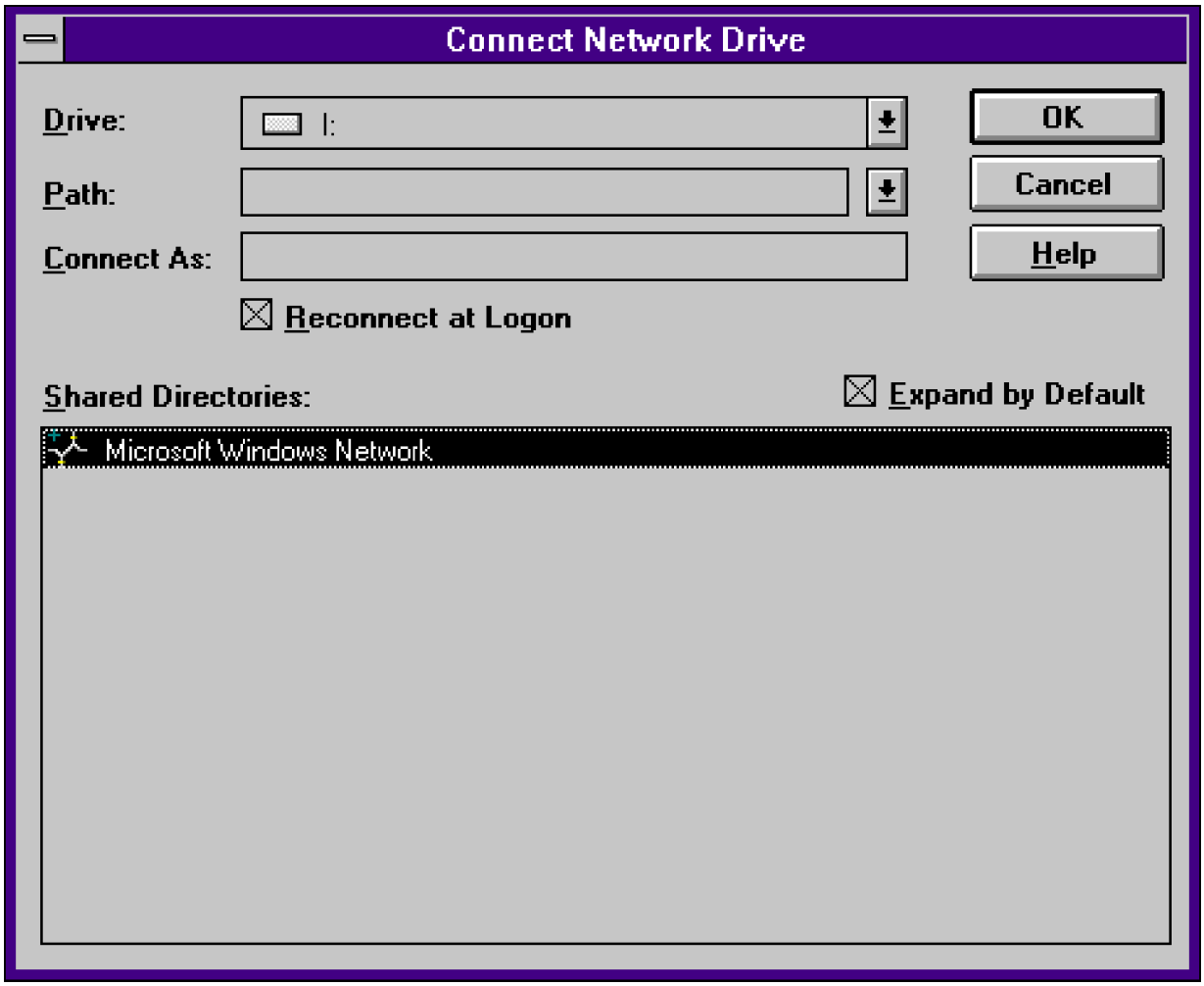

Figure 12. Connect Network Drive Window

5.2.3.6 Sharing File Directories

To give other users on the network access to a directory, select that directory in the `File Manager` window by clicking on it once, and then select the `Share As` option from the `Disk` pull-down menu. The `New Share` window appears (Figure 13). Click on the `OK` button in the `New Share` window. Access to this shared drive may be controlled by using the `Permissions` button in this window.

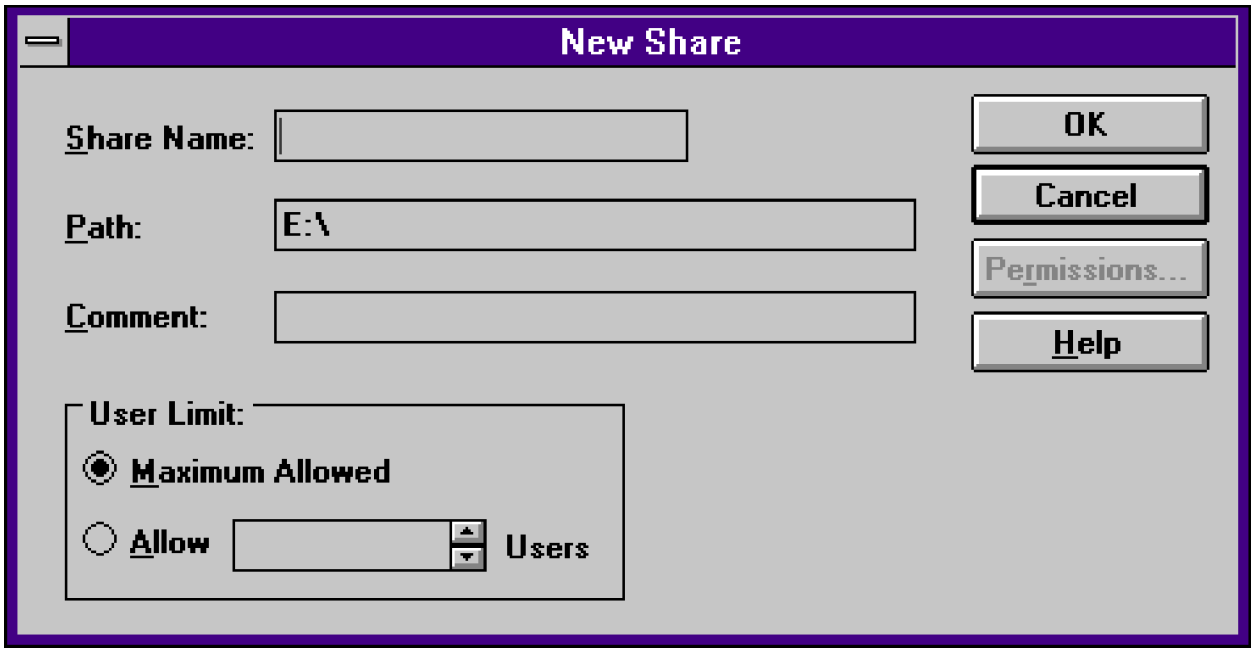

Figure 13. New Share Window

5.3 Segment Installation Option

The `DII Installer` icon can be run from the System Administration account group. The `DII Installer` icon is in the `System Administration` window, which is in the `Program Manager` window. Double-click on the `DII Installer` icon to install a segment. The `DII COE Installer` window appears (Figure 14).

Follow the steps below to install properly formatted DII COE segments:

STEP 1: **Select the installation device**. Click on the `Source Drive` arrow key. This arrow key allows the user to select the device to use as the installation source drive. The device selection defaults to a drive on the local machine.

STEP 2: **Read the contents of the selected installation device**. Click on the `Read TOC` button. The media will be scanned for the segments or patches that it contains, and then these items will appear in the `Installation Segments` panel of the `DII COE Installer` window. Any number of segments may be selected in this window.

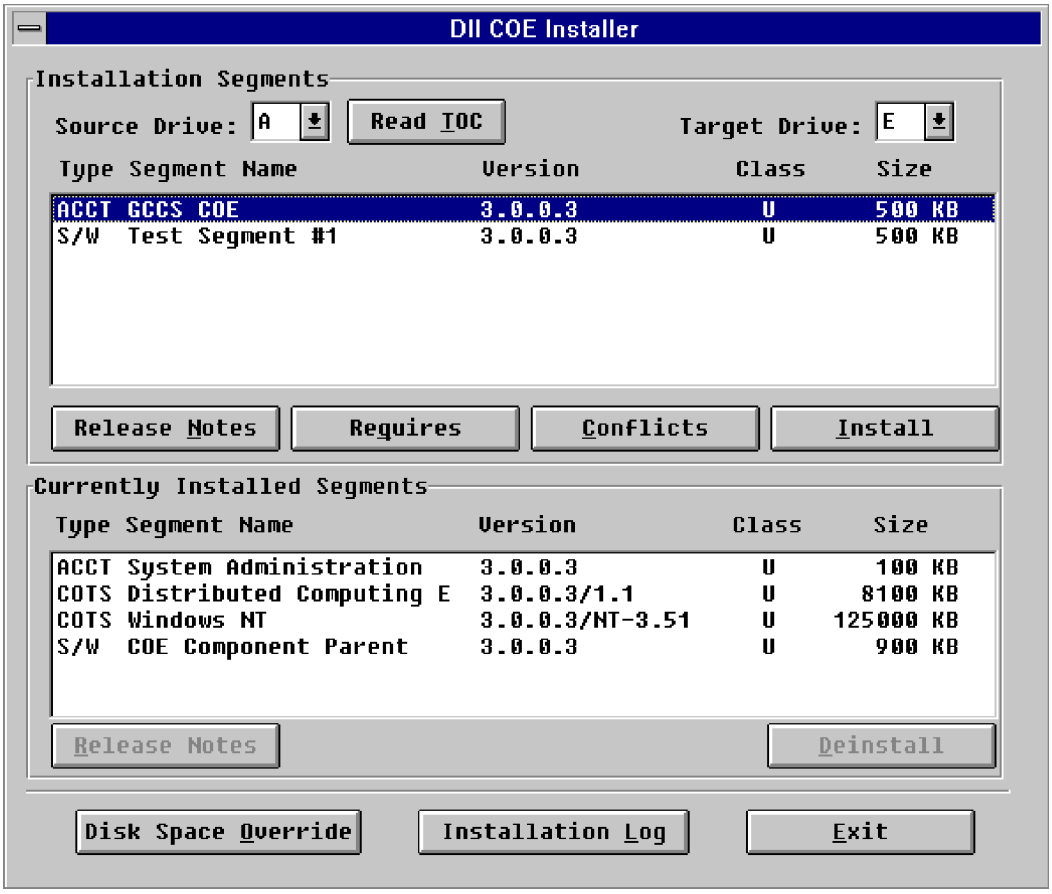

Figure 14. DII COE Installer Window

STEP 3: **Display required segments or patches**. Select the desired segment. Only one segment may be selected at a time. Click on the `Requires` button to display any required segments or patches that must be installed in conjunction with a selected segment. The `Requires` window appears (Figure 15).

STEP 4: **Display conflicting segments or patches.** Select the desired segment. Only one segment may be selected at a time. Click on the `Conflicts` button to display any segments or patches that cannot be installed in conjunction with a selected segment. The `Conflicts` window appears (Figure 16).

STEP 5: **Display release notes**. Select the desired segment. Only one segment may be selected at a time. Click on the `Release Notes` button to display information about a specific segment or patch. The `Release Notes` window appears (Figure 17).

STEP 6: **Select segments to install**. Highlight the segments or patches that you want to install from the `Installation Segments` panel of the `DII COE Installer` window.

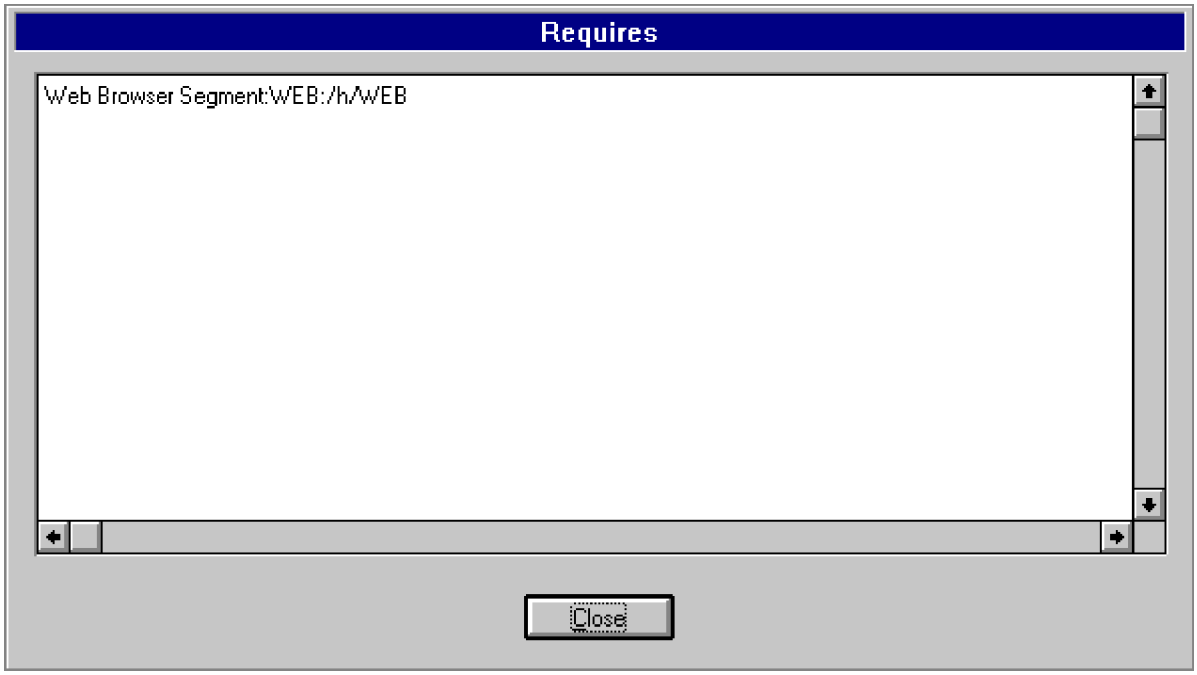

Figure 15. Requires Window

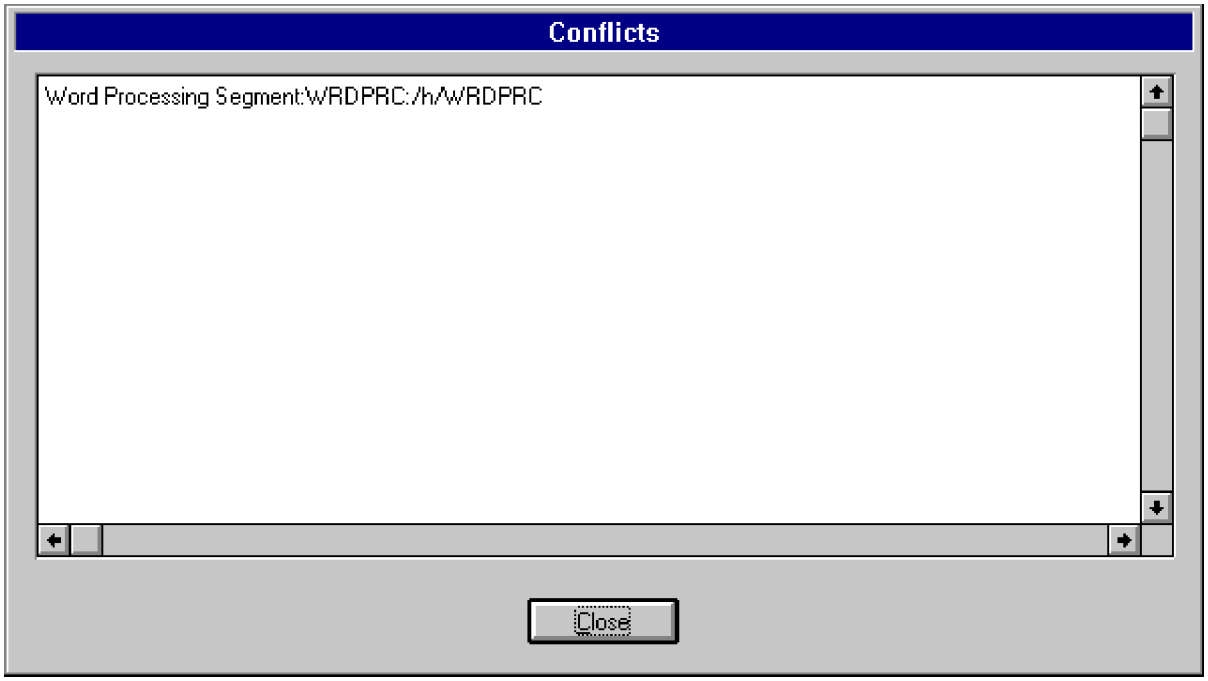

Figure 16. Conflicts Window

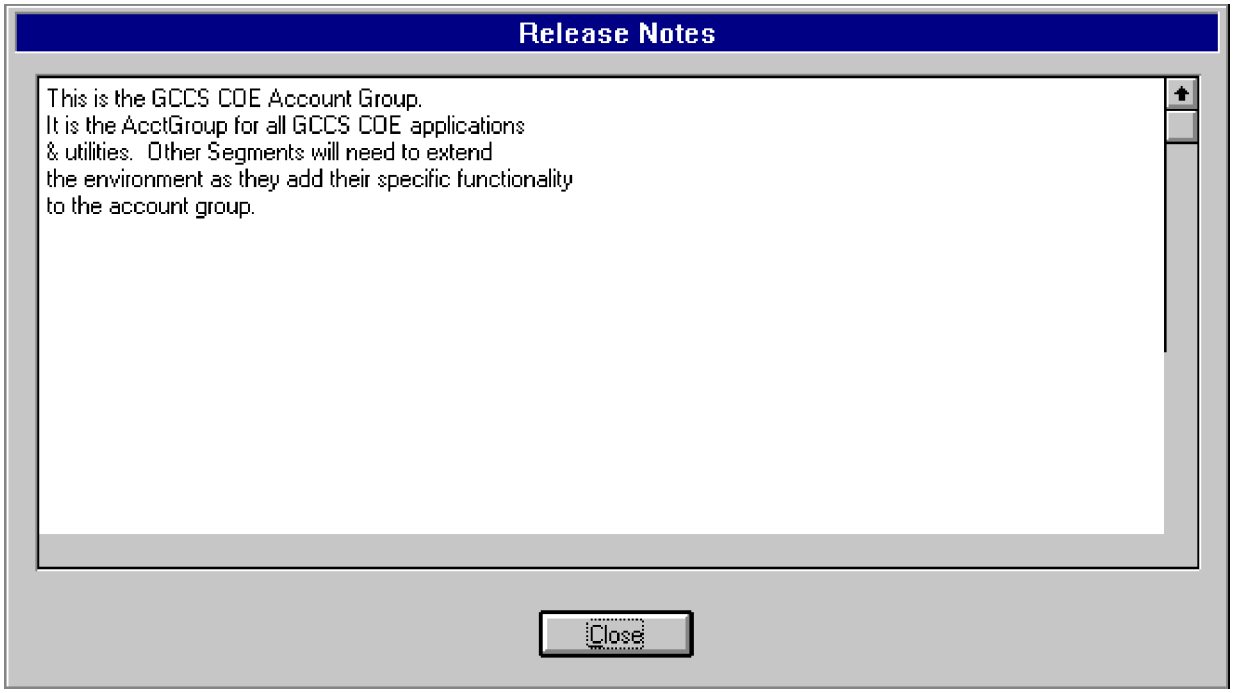

Figure 17. Release Notes Window

STEP 7: **Select the target device**. Click on the arrow key to select the target device from the `Target Drive` field. Only non-removable drives, including network drives, are available for installation.

NOTE: The system automatically reserves a space capacity of 80 percent for disk usage on each available hard disk to allow for segment growth. Click on the `Disk Space Override` button to override this space restriction. The `Disk Space Override` window then appears (Figure 18), which allows the user to modify the reserved disk space for a particular installation.

Figure 18. Disk Space Override Window

STEP 8: **Install selected segments**. Click on the `Install` button to begin the installation process for the selected segments. The user receives a prompt to enter the floppy diskette from which the desired segments will be installed. Once the desired segments are installed, they appear in the `Currently Installed Segments` panel of the `DII COE Installer` window.

STEP 9: **Display the installation log**. Click on the `Installation Log` button once the installation is complete to display a detailed log of the installation process (Figure 19).

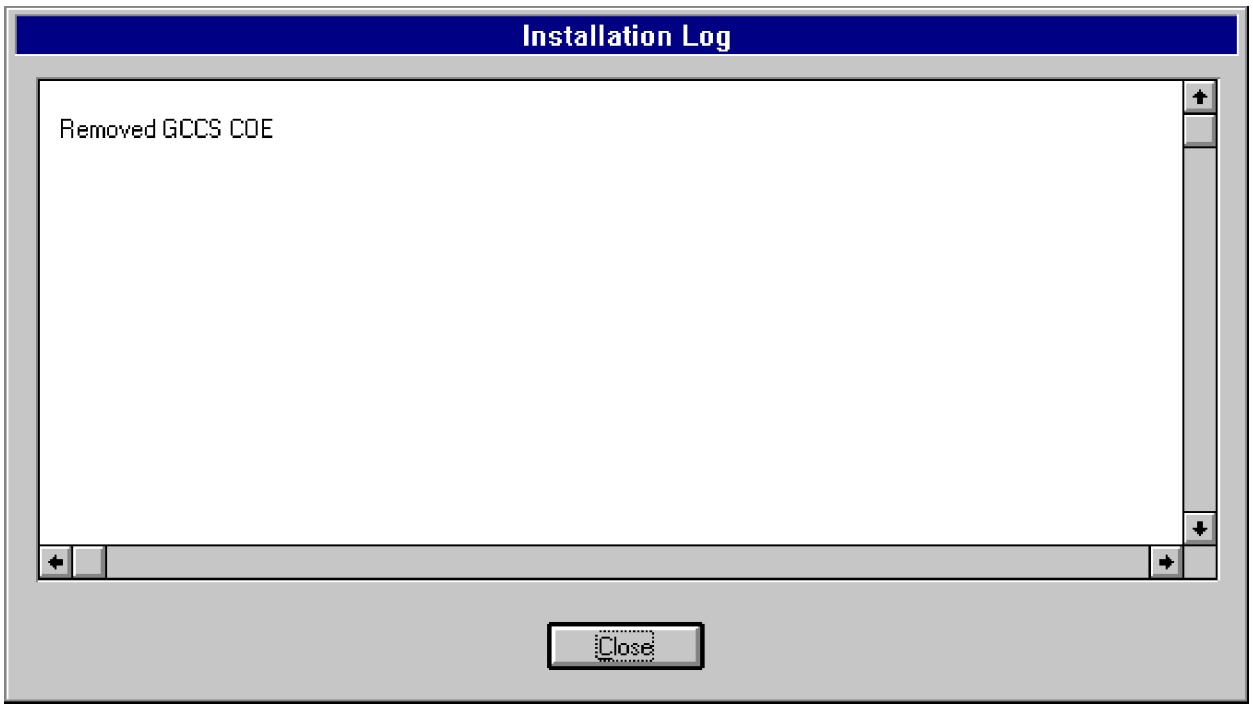

Figure 19. Installation Log Window

STEP 10: **Exit the `DII COE Installer` window**. Click on the `Exit` button from the `DII COE Installer` window to end the installation of segments. A dialog box appears with the following prompt: `Are you sure you wish to exit the DII COE Installer?` Click on the `YES` button to exit the installer or click on the `NO` button to return to the `DII COE Installer` window.

5.4 Network Options

Windows NT network options are provided through a variety of tools. `Network` menu options supported by the Windows NT Operating System are `Computer Name` and `Date/Time`. This subsection also describes how to edit hosts.

5.4.1 Computer Name Option

The `Computer Name` option allows the user to change the computer name. To change the computer name, double-click on the `Network` icon in the `Control Panel` group of the `Main` group to open the `Network Settings` window. Click on the `Change` button next to the `Computer Name` field to open the `Computer Name` window (Figure 20). After the `Computer Name` window appears, change the name of the computer and click on the `OK` button to accept the changes.

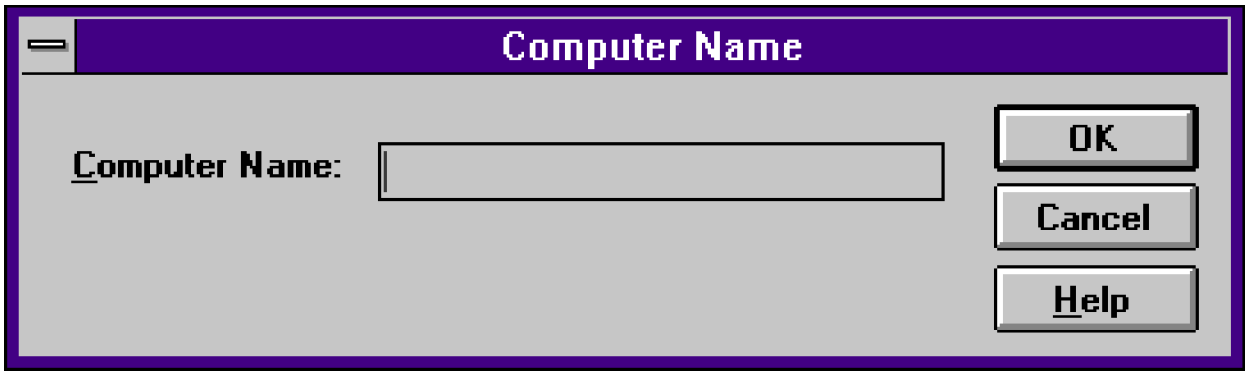

Figure 20. Computer Name Window

5.4.2 Date/Time Option

The `Date/Time` option allows the user to edit the system date, time, and time zone. To change the system date and time, double-click on the `Date/Time` icon in the `Control Panel` group of the `Main` group. The `Date/Time` window appears (Figure 21). Edit the `Date`, `Time`, and `Time Zone` fields as required, and click on the `OK` button to accept the changes.

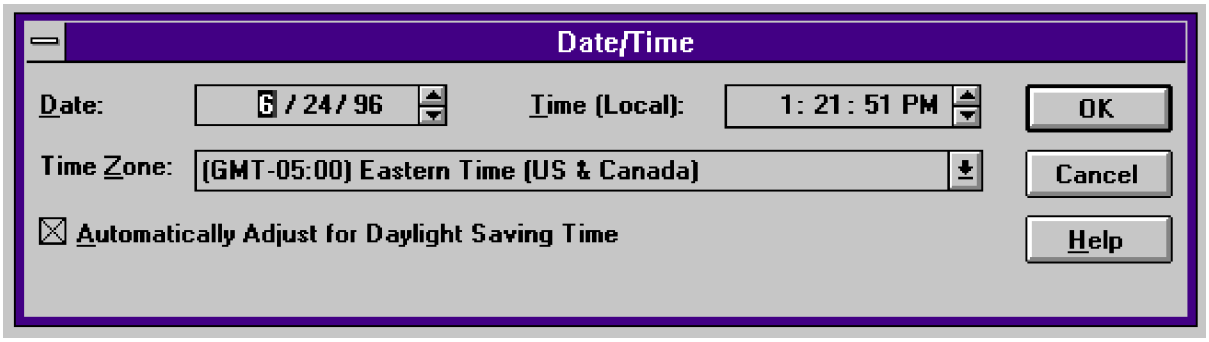

Figure 21. Date/Time Dialog Window

5.4.3 Edit Hosts Capability

Local hosts may be modified using any ASCII text editor. Invoke the Windows NT notepad editor by double-clicking in the `Notepad` icon in the `Accessories` program group. Then open `C:\WINNT35\SYSTEM32\DRIVERS\ETC\HOSTS` and edit hosts as required.

NOTE: The drive under which the `WINNT35` directory is loaded may differ between machines.

5.5 Account Management (User Manager) Options

The `User Manager` option provides Windows NT account management capabilities. Double-click on the `User Manager` icon in the `Administrative Tools` program group, which is in the `Program Manager` window, to invoke this option. This option allows the system administrator to add users, provide new names for users, change user passwords, and grant system rights.

5.5.1 User Menu Option

The `User` pull-down menu options in the `User Manager` menu bar that are supported by the Windows NT Operating System are `New User`, `Delete`, `Rename`, and `Properties`.

5.5.1.1 New User Option

Selecting the `New User` menu option opens the `New User` window (Figure 22). Enter the appropriate information in the `Username`, `Full Name`, `Description`, `Password`, and `Confirm Password` fields. Selecting the `Groups` button allows the new user to be assigned as a member of a current group. Selecting the `Profile` button allows the user to define a login script name and a home directory. Refer to the *Microsoft Windows NT Workstation System Guide* for more information on groups and profiles. Click on the `OK` button to accept the changes.

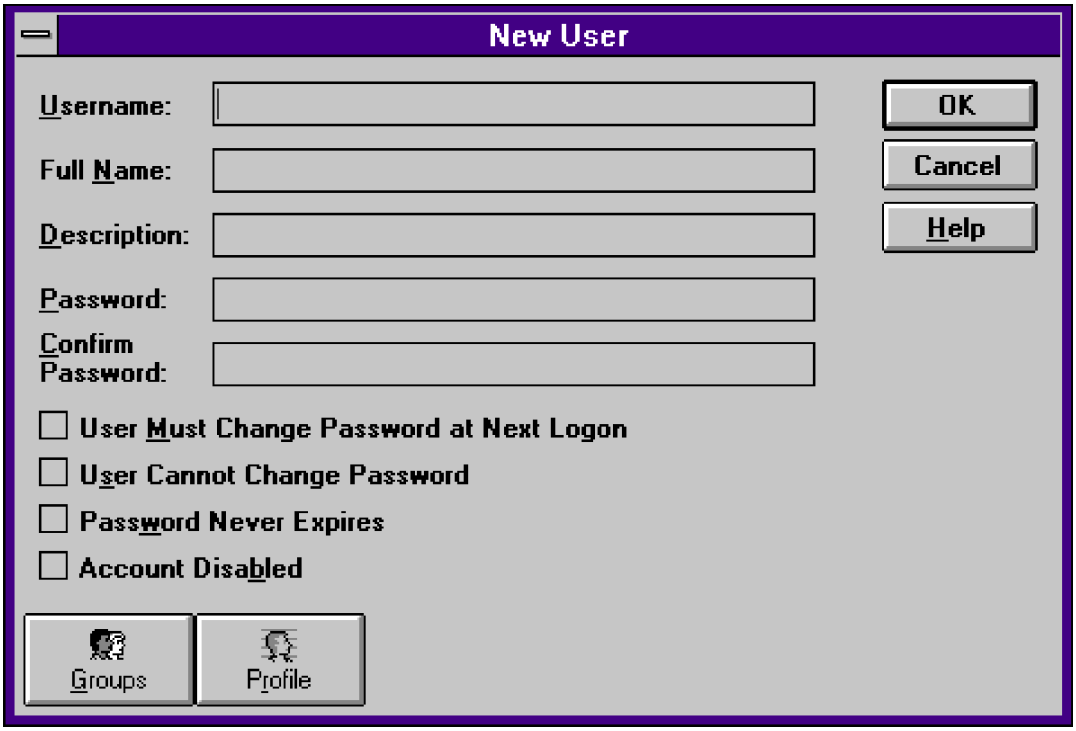

Figure 22. New User Window

5.5.1.2 Delete Option

The `Delete` menu option allows the system administrator to delete the currently selected user (Figure 23). Select `Delete` from the `User` pull-down menu. Click on the `OK` button to confirm the deletion when prompted.

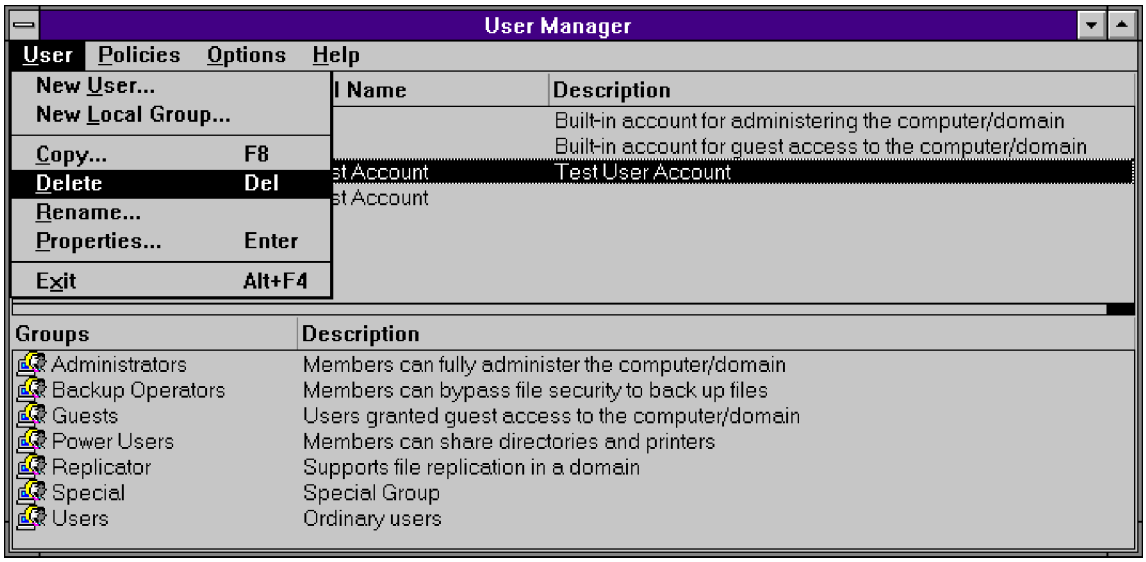

Figure 23. Delete Option Window

5.5.1.3 Rename Option

The `Rename` menu option allows the system administrator to rename the currently selected user. Select the `Rename` menu option from the `User` pull-down menu. The `Rename` window appears (Figure 24). Enter the new user name in the `Change To` field. Click on the `OK` button to accept the change.

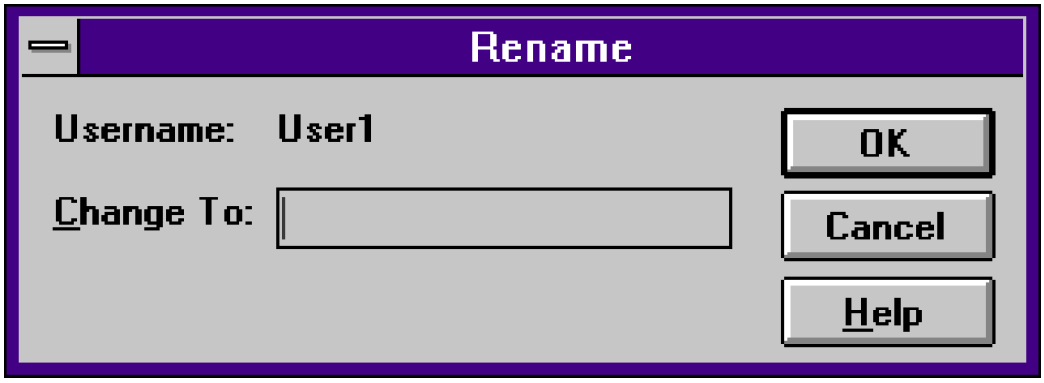

Figure 24. Rename Window

5.5.1.4 Properties Option

The `Properties` menu option allows the system administrator to change the password, password properties, username, description, group membership, and location of a user's login profile for the currently selected user. Select the `Properties` menu option from the `User` pull-down menu to open the `User Properties` window (Figure 25). Selecting the `Groups` button allows the new user to be assigned as a member of a current group. Selecting the `Profile` button allows the user to define a login script name and a home directory. Refer to the *Microsoft Windows NT Workstation System Guide* for more information on groups and profiles. Click on the `OK` button to accept the changes.

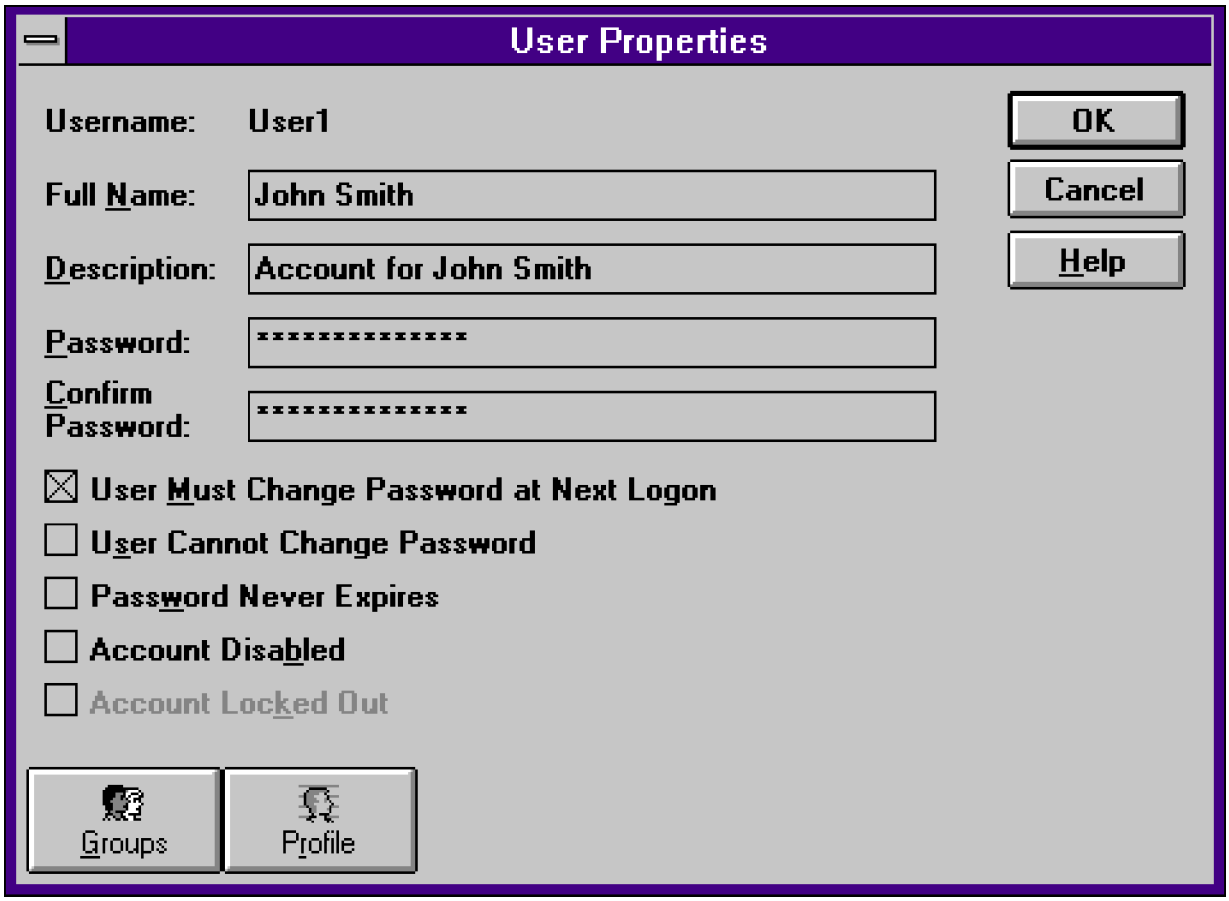

Figure 25. User Properties Window

5.5.2 Policies Menu Option

The `Policies` pull-down menu options in the `User Manager` menu bar supported by the Windows NT Operating System are `Account`, `User Rights`, and `Audit`.

5.5.2.1 Account Option

The `Account` menu option allows the system administrator to change the policies of the account, such as time for password to expire, minimum password length, and lockout after several incorrect log on attempts. Select the `Account` option from the `Policies` pull-down menu. The `Account Policy` window appears (Figure 26).

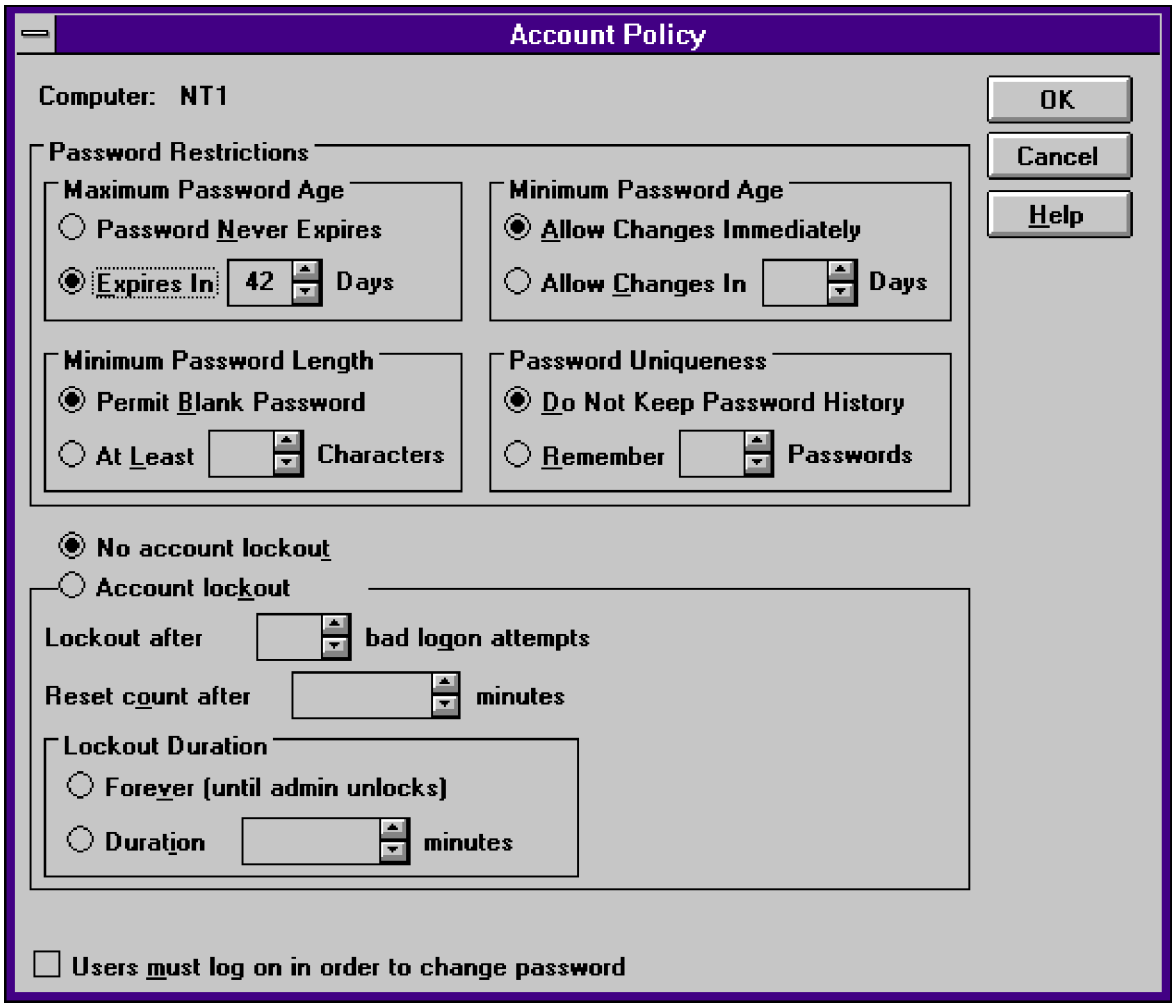

Figure 26. Account Policy Window

5.5.2.2 User Rights Option

The `User Rights` menu option allows the system administrator to grant rights to various system functions. Examples of rights include accessing the computer from the network, setting the system time and date, and shutting down the computer. Select the `User Rights` option from the `Policies` pull-down menu. The `User Rights Policy` window appears (Figure 27).

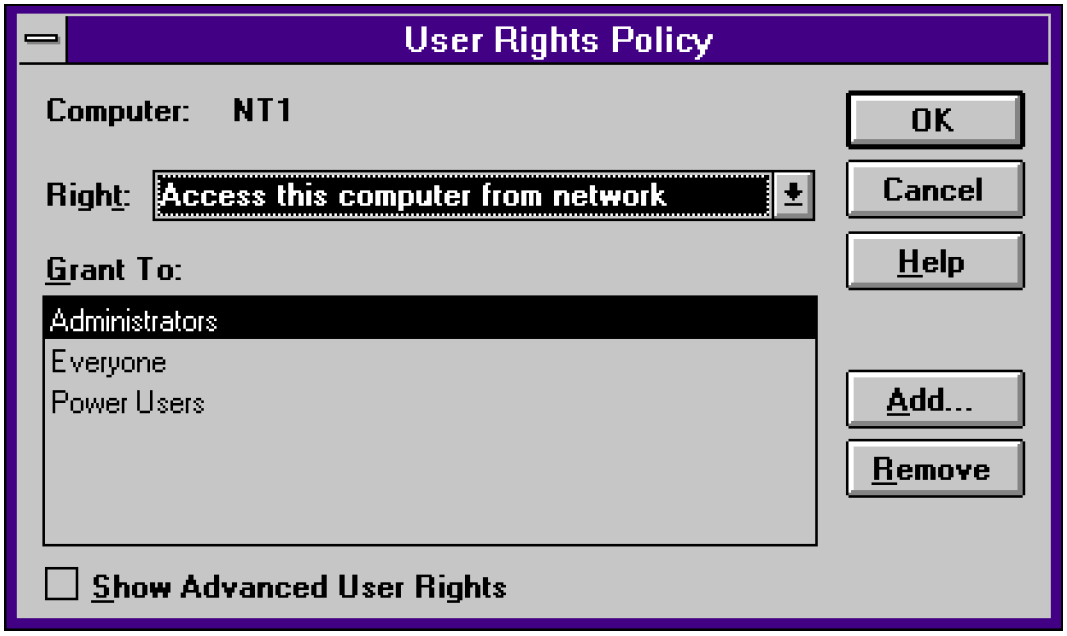

Figure 27. User Rights Policy Window

5.5.2.3 Audit Option

The `Audit` menu option allows the system administrator to control the logging of system events (e.g., log on, log off, and file access). These events are written to the system event log. Select the `Audit` option from the `Policies` pull-down menu. The `Audit Policy` window appears (Figure 28). Click on the `Audit These Events` toggle to edit the list of system events in the window.

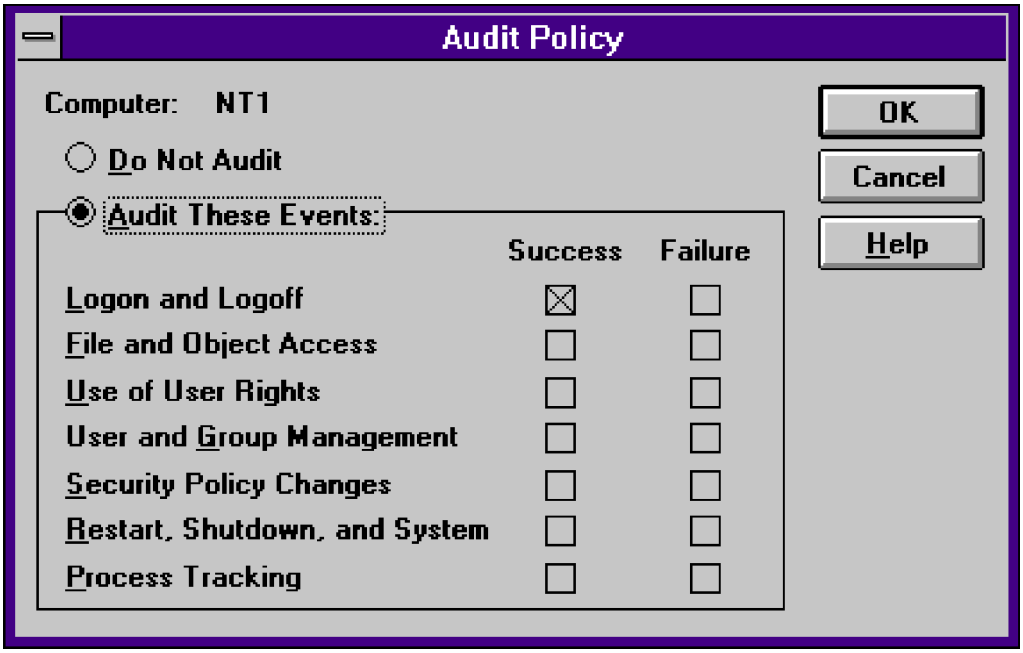

Figure 28. Audit Policy Window